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Prospective Industries: An Assessment of the Performance and Competitiveness of Vineyards in Central Poland

Perspektywistyczne branże w gospodarce – ocena działalności i konkurencyjności winnic z Polski centralnej

Abstract

Climate change is affecting agriculture worldwide, enabling wine production in regions previously considered unfavourable. Poland, including its central region encompassing the Łódzkie, Mazowieckie and Świętokrzyskie provinces, is increasingly taking advantage of these conditions. An improved climate favours the establishment of vineyards and strengthens the region's position within the growing wine industry. The aim of this study was to assess the competitiveness of wineries in central Poland, with a focus on the role of marketing strategies and internal resources in shaping their market position. A qualitative approach was used, based on semi-structured interviews with 10 winery owners and an extended SWOT analysis. This made it possible to identify key strengths and weaknesses, as well as opportunities and threats affecting the industry. The results indicate that wineries are capitalising on local strengths, but face difficulties such as limited distribution channels, poor promotion and changing consumer preferences. Increasing competitiveness requires an expanded distribution network, more effective promotional activities and stronger regional cooperation.

Keywords:
perspectives of winemaking development, competitiveness of vineyards, vineyards in Poland, assessment of vineyards operations

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Streszczenie

Zmiany klimatyczne wpływają na rolnictwo na całym świecie, umożliwiając produkcję wina w regionach wcześniej uznawanych za niesprzyjające. Polska, w tym region centralny, obejmujący województwa łódzkie, mazowieckie i świętokrzyskie, coraz lepiej wykorzystuje te warunki. Poprawa klimatu sprzyja zakładaniu winnic i wzmacnia pozycję regionu w rozwijającej się branży winiarskiej. Celem badania była ocena konkurencyjności winnic w centralnej Polsce ze szczególnym uwzględnieniem roli strategii marketingowych i zasobów wewnętrznych w kształtowaniu ich pozycji rynkowej. Zastosowano podejście jakościowe, oparte na częściowo ustrukturyzowanych wywiadach z 10 właścicielami winnic oraz rozszerzonej analizie SWOT. Pozwoliło to zidentyfikować kluczowe mocne i słabe strony oraz szanse i zagrożenia wpływające tę branżę. Wyniki wskazują, że winnice wykorzystują lokalne atuty, ale napotykają trudności, takie jak ograniczona dystrybucja,

Słowa kluczowe:
perspektywy rozwoju winiarstwa, konkurencyjność winnic, winnice w Polsce, ocena działalności winnic

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słaba promocja i zmieniające się preferencje konsumentów. Wzrost konkurencyjności wymaga rozbudowy sieci dystrybucji, skuteczniejszych działań promocyjnych i silniejszej współpracy regionalnej.

Introduction

The competitiveness of the agri-food industry is determined by several factors, including innovation, market access, product quality, sustainability and government policies [**Mizik, 2021**]. Structural changes in agriculture, driven by global trade dynamics, environmental pressures and technological progress, are transforming the conditions under which food producers operate. Precision agriculture [**Zhang et al., 2002**; **Balafoutis et al., 2017**], quality certification [**Szczepaniak, Sznajer, 2022**] and sustainability standards [**Krumme, Melkonyan, 2019**] are becoming increasingly important in improving efficiency and responding to consumer expectations. Moreover, knowledge transfer and public support play a crucial role in fostering innovation and long-term competitiveness [**Pohlmann et al., 2020**]. This need for continuous innovation and adaptability applies broadly across the agricultural sector, including its individual branches. One example is the wine industry, which combines elements of primary production and processing, positioning it firmly within the agri-food sector.

In the context of the global wine market, competitiveness is increasingly influenced by both internal and external factors such as brand provenance, geographic indication systems, sustainability certifications and adaptability to consumer preferences [**Leeuwen et al., 2019**; **Trestini et al., 2020**; **Battaglene, 2023**]. Technological innovations in vineyard management, including digital tools and precision viticulture [**Provost, Pedneault, 2016**], alongside the strategic development of distribution channels [**Samiee, 2008**], are recognised as key drivers of success [**Bernetti et al., 2006**]. Nonetheless, market entry barriers remain high, particularly in established wine-producing regions where legacy, consumer trust and quality benchmarks set rigorous standards [**Jimenez-Asenjo, Filipescu, 2019**].

Against this global backdrop, the Polish agri-food sector is undergoing significant transformation. It faces structural challenges such as farm consolidation [**Bryła, 2018**] yet shows growing potential in emerging sectors, notably wine production. Although Poland is not traditionally viewed as a wine producing country, recent years have seen a marked expansion in viticulture, particularly through the emergence of small, boutique wineries [**Chrobocińska, 2021**; **Świdnicki, 2023**]. This growth is especially notable in central Poland where favourable edaphic and climatic conditions converge with local entrepreneurial initiative and institutional support [**Kunicka-Styczyńska et al., 2016**; **Wójcik, 2022**]. Although wine consumption in Poland per capita remains low relative to Western European standards, there has been a notable increase in consumer awareness and demand for domestic wines [**Mazurkiewicz-Pizło, 2024**].

From a regulatory perspective, wine producers in Poland are permitted to produce wine from grapes cultivated on their own land, but commercial sale requires compliance with a formal legal framework. Specifically, producers must register annually in the national register of wine producers and apply for retail or wholesale licences depending on their sales channels [**Mazurkiewicz-Pizło, 2016**]. Legal and institutional barriers remain one of the most frequently reported constraints faced by Polish wine producers, particularly in the early stages of commercialisation [**Świdnicki, 2023**]. Although Polish law does not impose a mandatory waiting period after the establishment of a vineyard, the actual time to market is generally determined by agronomic factors because grapevines typically require three to four years to reach fruit-bearing maturity suitable for vinification [**Głąbiński, Koźmiński, 2019**]. Despite recent improvements, the legal structure still presents administrative barriers, particularly for new entrants [**Mazurkiewicz-Pizło, Pizło, 2018**].

The effects of climate change, while posing certain challenges, have also created new opportunities by extending the geographical boundaries of viable viticulture regions [**Maciejewska et al., 2024**]. Evidence suggests that these climatic shifts facilitate the acclimatisation of grapevines in central Poland [**Maciejewska et al., 2023**], contributing to the dynamic development of this segment of horticultural production. Simultaneously, consumer preferences are shifting toward locally produced, natural wines, thus creating favourable market conditions for domestic producers [Mazurkiewicz-Pizło, 2018]. Experimental cultivation of grape varieties adapted to local terroir is gaining popularity [Kunicka-Styczyńska et al., 2015], further supported by regional training programmes, wine festivals and the activities of winemaking associations [Mazurkiewicz-Pizło, 2016]. According to official records, the number of registered vineyards in Poland increased from 380 to 425 in the 2022/2023 season [KOWR, 2024]. Polish wine is also beginning to enter export markets, contributing to the broader competitiveness of the country's agri-food sector [Łukiewska, 2023]. In central Poland specifically, the Mazowieckie and Łódzkie voivodeships hosted 14 registered vineyards in that same season [KOWR, 2024].

Despite this positive development, the Polish wine industry, particularly in the country's central regions, continues to face substantial challenges. These include limited historical expertise in high-quality wine production [Pretorius, Bauer, 2002], legal and regulatory constraints and the implications of ongoing climate variability [Maciejczak, Mikiciuk, 2019; Prandecki et al., 2021]. Moreover, the transition toward commercial-scale operations will necessitate significant improvements in profitability, operational efficiency and strategic marketing [Keller, 2010; Bosak, 2013]. Enhancing international competitiveness will require the implementation of export-oriented strategies [Stupino et.al., 2019], further innovation [Świdnicki, 2023] and the development of wine tourism [Maciejczak, Mikiciuk, 2019]. Polish consumers are becoming more discerning with growing sensitivity to price-quality ratios, product origin and branding [Grzegorzewska, Stasiak-Betlejewska, 2024]. These trends, combined with local promotional efforts and growing market demand, strengthen the role of the region within the broader national wine landscape and offer prospects for sustained growth [Schaefer et al., 2018; Barska, Wojciechowska, 2020]. This expansion will require ongoing strategic adjustments, given the sector's distinct cultural features, regulatory environment and exposure to global market forces [Sancewicz-Kliś, 1992; Wójcik, 2022].

In this context, the research applied the concept of marketing mix, which included product, price, promotion and distribution, as well as an in-depth SWOT strategic analysis to assess the strengths, weaknesses, opportunities and threats in the operation of vineyards. The main objective of this study was to evaluate the competitiveness of vineyards in central Poland with a particular emphasis on the role of marketing strategies and internal resources in shaping market positioning. In-depth interviews (IDI) were also conducted to complement the SWOT analysis and explore the prospects of winery owners and managers amid strategic challenges.

Materials and Methods

Study Overview

The study employed a qualitative research approach, utilising semi-structured in-depth interviews (IDI) as a primary method of data collection. The qualitative approach focused on understanding the competitiveness and operations of vineyards in central Poland, with particular attention to the role of the marketing mix (product, price, distribution and promotion) in achieving a competitive advantage. Semi-structured interviews, a key qualitative data collection strategy, involved pre-defined but open-ended questions, enabling the collection of targeted textual data while maintaining flexibility to explore emerging themes.

On the basis of the IDIs, a comprehensive and in-depth SWOT analysis was conducted to assess the internal strengths and weaknesses, as well as the external opportunities and threats, influencing the competitiveness of vineyards in central Poland. This enhanced SWOT analysis extended beyond basic evolution by incorporating detailed insights from the interviews, enabling a more nuanced identification of strategic factors. It examined interdependencies between elements of SWOT and prioritised key issues based on their impact and relevance to winery operations and market positioning.

This methodological approach balanced the openness of unstructured interviews with a focus of structured ones, ensuring a comprehensive understanding of participants' experiences. It also facilitated the research process by moving from general themes (e.g., marketing strategies and market challenges) to more detailed insights into specific factors and variables affecting winery competitiveness. By combining semi-structured interviews with a robust, in-depth SWOT analysis, the study provides a holistic evaluation of the regional wine industry.

Study Description

The study included 10 participants who took part in semi-structured in-depth interviews (IDIs). Study participants were recruited through purposive sampling. Invitations were sent to vineyard owners operating in three voivodeships in central Poland: Łódzkie (three participants), Mazowieckie (two participants) and Świętokrzyskie (five participants). The goal was to include diverse vineyard sizes and operational profiles. In total, 10 winery owners participated in the study. The interviews were conducted in natural settings and lasted between 120 and 150 minutes. Each interview was recorded, transcribed and analysed to ensure a detailed and comprehensive dataset. The interviews were designed to explore a range of topics critical to understanding the operations and competitiveness of the vineyards. The topics included:

1. Characteristics of the vineyards – factors such as vineyard size and production scale.
2. Assessment of current operations – challenges and opportunities in daily operations, including production techniques and resource management.
3. Sales channels for winery products – insights into sales strategies, target markets and the role of the distribution network.
4. Promotional activities – marketing strategies, including advertising, branding and events aimed at increasing visibility and sales.
5. Economic situation – a general overview of financial performance with data provided in percentage terms.

The interviews lasted between 120 and 150 minutes and were conducted in natural settings. Each interview was recorded, transcribed and analysed to ensure a detailed and comprehensive dataset.

Additionally, the research incorporated a robust and in-depth SWOT analysis aligned with established frameworks described in the strategic management literature [**Hill, Westbrook, 1997**; **Panagiotou, 2003**]. The SWOT analysis was performed in three structured stages:

1. Environmental analysis – identification of all factors impacting the vineyards, categorised into strengths, weaknesses, opportunities and threats.
2. Factor classification – grouping positive factors (strengths and opportunities) and negative factors (weaknesses and threats) into internal (e.g., strengths and weaknesses) and external (e.g., opportunities and threats) categories in line with traditional SWOT matrix methodology [**Weihrich, 1982**].
3. Expert evaluation – each factor was assessed for its strategic impact by 14 experts, using a 10-point scale where 10 indicated the highest impact. The panel included academic researchers and experienced practitioners with professional backgrounds in viticulture, horticulture and agri-food production.

Moreover, to operationalise the SWOT findings and ensure a systematic and quantitative assessment, the study integrated a structured set of ratios: Market Attractiveness (MA), Market Position (MP), and Strategic Success Probability (SSP). These metrics allowed for a clearer interpretation of the strategic positioning of the wineries. Their application follows broader trends in quantifying SWOT outputs to improve strategic decision-making [**Pickton, Wright, 1998**].

Market Attractiveness (*MA*) assessed the favourability of the external environment by evaluating the balance between opportunities and threats identified in the SWOT analysis. The calculation followed the formula:

$$MA = \frac{O}{O + T}$$

where:

O – represents the total weighted score of opportunities identified during the analysis.

T – represents the total weighted score of threats, including challenges such as climate change and frost damage.

Market position (*MP*) evaluated the internal capabilities of the vineyards by comparing their strengths to weakness. The formula used was:

$$MP = \frac{S}{S + W}$$

where:
S – represents the total weighted score of strengths, such as high-quality wine production, an advantageous location and a skilled workforce.
W – represents the total weighted score of weakness, including issues such as limited land for expansion, seasonal labour shortages and inadequate infrastructure for enotourism.

Strategic Success Probability (*SSP*) synthesised both external and internal factors to provide an overall measure of the likelihood of strategic success. The formula was:

$$SSP = \frac{MA + MP}{2}$$

where:
MA – reflects the winery's ability to capitalise on external opportunities while mitigating threats.
MP – highlights its internal strengths in addressing operational and strategic challenges.

This structured analytical approach, combining qualitative insights with quantitative metrics, provided a comprehensive framework for interpreting the results of the SWOT analysis. By quantifying both external and internal dynamics, the study offered insights into the factors shaping the competitiveness of vineyards in central Poland. The integration of Market Attractiveness (*MA*), Market Position (M*P*) and Strategic Success Probability (*SSP*) allowed for a nuanced understanding of the winery's strategic position, informing targeted recommendations to enhance its market presence and operational efficiency. This methodology reflected best practices in the strategic analysis literature [Weihrich, 1982; Pickton, Wright, 1998; Helms, Nixon, 2010] and highlighted critical areas where vineyards must focus their efforts to sustain and grow their competitive edge in an evolving market landscape.

Characteristics of the vineyards

The characteristics of the 10 vineyards included in the study are summarised in Table 1. The vineyards are different in terms of winery size, duration of operation and primary market area. They cultivated a strain of grape varieties tailored to local conditions and produced wines of varying quality and scale. The vineyards focused on local, regional or national markets, with some incorporating agrotourism activities into their operations. To ensure anonymity, the vineyards were coded from W1 to W10 throughout the analysis.

Table 1. Description of vineyards that took part in in-depth interviews

Vineyard	Region	Duration of winery operation	Hectares under cultivation	Primary market area
W1	Świętokrzyskie	3 years	0.81 ha	Local market
W2	Świętokrzyskie	9 years	1 ha	Local market
W3	Świętokrzyskie	9 years	1 ha	Local market
W4	Świętokrzyskie	10 years	1.5 ha	Local market
W5	Świętokrzyskie	11 years	2 ha	Local market, regional market, national market
W6	Świętokrzyskie	13 years	2 ha	Local market, national market
W7	Mazowieckie	14 years	2.4 ha	Local market, regional market
W8	Mazowieckie	17 years	2. 5 ha	Local market, regional market
W9	Łódzkie	19 years	3 ha	Local market, regional market
W10	Łódzkie	25 years	4.5 ha	Local market, regional market, national market

Notes: Primary market area: local market, regional market, national market.
Source: Author's own elaboration.

To provide a more comprehensive understanding of the surveyed vineyards, key characteristics – such as regional distribution, cultivated grape varieties, management and operational background and pricing strategies – were compiled and systematised in Table 2. Information was obtained from interviews, official websites and promotional materials. Many of the vineyards are family-operated enterprises with long-standing winemaking experience, reflecting a strong tradition and continuity in production practices. Pricing strategies were assessed based on the availability of product information on official websites, online stores and social media profiles, as well as declarations made during in-depth interviews. Where specific data were unavailable, this was clearly indicated to ensure transparency and analytical consistency.

Table 2. Key characteristics of vineyards

Vineyard	Region (Code)	Main grape varieties	Management and operational experience	Pricing strategy
W1	ŚW	*Cabernet Cortis, Johanniter, Pinot Noir, Regent, Riesling*	Family with long-standing winemaking experience	Pricing strategy appears to be not disclosed through specialist retail channels. Overall positioning suggests focus on premium segment.
W2	ŚW	*Chardonnay, Hibernal, Johanniter*	Family with long-standing winemaking experience	Pricing strategy appears to be not disclosed through specialist retail channels. Overall positioning suggests focus on premium segment.
W3	ŚW	Data not available	Family with long-standing winemaking experience	Pricing strategy appears to be transparent with products available through direct channels. Overall positioning suggests focus on premium segment.
W4	ŚW	*Regent, Solaris, Chardonnay*	Data not available	Pricing strategy appears to be transparent with products available through online channels. Overall positioning suggests focus on mid-to-upper segment.
W5	ŚW	Data not available	Family with long-standing winemaking experience	Pricing strategy appears to be transparent with products available through online channels. Overall positioning suggests focus on premium segment.
W6	ŚW	Data not available	Family with long-standing winemaking experience	Pricing strategy appears to be transparent with products available through online channels. Overall positioning suggests focus on premium segment.
W7	MZ	Data not available	Family with long-standing winemaking experience	Pricing strategy appears to be not disclosed through specialist retail channels. Overall positioning suggests focus on premium segment.
W8	MZ	*Rondo, Regent, Solaris, Seyval Blanc, Johanniter, Hibernal, Muscaris, Cabernet, Cortis, Jutrzenka, Bianca, Muskat Odeski*	Family with long-standing winemaking experience	Pricing strategy appears to be transparent with products available through online channels. Overall positioning suggests focus on premium segment.
W9	ŁD	Data not available	Family with long-standing winemaking experience	Pricing strategy appears to be not disclosed through specialist retail channels. Overall positioning suggests focus on premium segment.
W10	ŁD	Data not available	Family with long-standing winemaking experience	Pricing strategy appears to be not disclosed through specialist retail channels. Overall positioning suggests focus on premium segment.

Notes: Region codes used in the table refer to the following voivodeships in central Poland: ŚW – Świętokrzyskie, MZ – Mazowieckie, ŁD – Łódzkie

Source: Author's own elaboration.

Results

We present the results in three sections: Section 3.1 – Economic performance and cost structure, 3.2 Marketing strategy, 3.3. – Strategic analysis: SWOT with expert evaluation.

Economic performance and cost structure

Economic performance and financial sustainability emerged as central themes among the surveyed vineyards. All respondents confirmed regular investment in the development of their estates and emphasised maintaining financial discipline by meeting their obligations promptly.

Respondents provided detailed estimates of their cost structures, highlighting significant shifts during the first year of operation. Initial costs were dominated by fixed investment, which accounted for 60%–70% of total expenditure. Within a year, this dropped to 10%–15%, as operational costs for materials and labour became more prominent. Infrastructure and machinery initially constituted the largest expense, at 60%–70%, but this decreased to 10%–15% after the first year. Expenditures on bottles, labels, corks and other consumables increased from 20%–30% to 40%–50%. Seasonal labour costs rose significantly from 5%–10% to 20%–50%. Other expenses (e.g., marketing, event organisation) increased from 5%–10% to 10%–15% (Table 3).

Table 3. The average estimate of cost share for vineyard establishment on an annual basis

Cost category	At startup	One year later[1]
Fixed investments	60%–70%	10%–15%
Operating costs	20%–30%	40%–50%
Labour costs	5%–10%	20%–50%
Miscellaneous costs	5%–10%	10%–15%

Notes: The “One year later” column refers to the first of year of full operational activity following initial vineyard setup, which may or may not coincide with the first year of formal market sales. In most cases, commercial sales begin in the third or fourth year due to grapevine maturation cycles; however costs related to preparation to market entry typically begin earlier and are reflected in the cost structure presented here. Due to the exploratory and qualitative character of the study, participants were not required to disclose exact financial values. As a result, the data only reflect percentage-based structures, not total amounts. This approach was necessary to ensure respondent anonymity and trust.

Source: Author’s own study.

In the initial stages of vineyard operations, wine sales accounted for a significant portion of total revenues, ranging from 10% to 85%. For one producer who obtained a licence to sell alcohol immediately, wine sales constituted 100% of revenue from the outset. Within the first year, revenue contributions from wine sales increased across all vineyards, ranging between 10% and 100%. Revenue from wine tastings, initially accounting for up to 75%, decreased to 10%–25% within a year. Other revenue sources, such as wine-related events, agritourism and accommodation offerings, saw a modest share of approximately 10%, reaching 5% of total revenue (Table 4).

Table 4. Average estimate of the share of sales revenue from vineyard products in total farm revenue

Revenue source	At startup (upon receiving sales permit)[1]	One year later
Wine	10%–85% (100% for one)	10%–100%
Tastings	20%–75%	10%–25%
Events, agrotourism, accommodations	10%–15%	5%

Note: The data refer to the first year of commercial operation (i.e., the year in which the sales permit was obtained) and the following year. Since most vineyards begin formal sales 3–4 years after establishment, these figures reflect revenue distribution from the early stages of commercialisation. Due to the exploratory and qualitative character of the study, participants were not required to disclose exact financial values. As a result, the data only reflect percentage-based structures, not total amounts. This approach was necessary to ensure respondent anonymity and trust. Due to the exploratory and qualitative character of the study, participants were not required to disclose exact financial values. As a result, the data only reflect percentage-based structures, not total amounts. This approach was necessary to ensure respondent anonymity and trust.

Source: Author’s own study.

The results presented in Table 3 and Table 4 summarise the key themes identified during the analysis. The specific insights highlighted in the tables are confirmed below, which illustrate the perspectives and experiences of participants. Examples:

> "We systematically invest in the development of our estate and manage to meet financial obligations on time. Unfortunately, we're not earning much yet, but we're not in debt."
>
> (C01)

> "At the beginning, wine tasting, and wine sales were the main sources of revenue. Events contributed around 15% of income, and this stayed consistent in the first year."
>
> (C04)

> "Organising events like tastings or campfires is more about promoting the vineyard than generating income. Initially, these brought in 10% but decreased to 5% after the first year, while wine sales increased."
>
> (C03)

> "The biggest expense at the beginning was purchasing machinery, which accounted for about 70% of the costs. Consumables like bottles and corks initially made up 20%, and the other costs were around 10%. After a year, this changed dramatically – fixed investments dropped to 10% and operating costs rose to 50%."
>
> (C01)

> "Initially, fixed costs like infrastructure were 60%. Consumables were 20%, labour 10% and miscellaneous costs 10%. After the first year, fixed costs decreased to 15%, consumables rose to 40%, labour to 35% and other costs stayed at 10%."

Marketing strategy of vineyards

Vineyard operations primarily focus on cultivating grapevines while incorporating complementary agricultural activities to support their operations and household needs. These include growing tomatoes in greenhouses, grains and fruit trees such as cherries, apples and apricots. Secondary crops are generally used for personal consumption – for example, in making preserves – rather than for commercial purposes. This diversity not only reduces the risks associated with grapevine cultivation but also reflects a broader approach to agrotechnical efficiency.

Enotourism has emerged as a vital element of vineyard operations, combining wine production with hospitality, cultural events and recreational activities as an additional aspect of their offerings. Vineyards attract visitors with services – such as guided tours, wine tastings and workshops – and outdoor events such as picnics, concerts and summer cinemas. This industry is viewed as a highly promising avenue for growth, aligning with global trends in wine tourism. The development of enotourism in central Poland represents a significant opportunity not only for the economic growth of the region but also for the promotion of wine culture and ecological education.

Direct sales at vineyards dominate as the primary channel for wine distribution. Many producers use wine-tasting events to create personal connections with consumers and foster interest in their products. A few vineyards have established partnerships with wine bars, restaurants and retail outlets to expand their reach. However, online sales remain limited. Regulatory hurdles, including the need for special permits, deter smaller producers from leveraging this channel.

Direct, on-site transactions at the vineyards remain the primary method of wine sales. Many producers highlight the importance of face-to-face interaction with consumers, often during wine tastings, which allow them to build personal connections and educate visitors about their products. Some vineyards also distribute their wines to restaurants, wine bars and hotels, expanding their market reach and increasing brand recognition. However, only a small number of producers sell wine online due to the complexities of e-commerce regulations in Poland.

All respondents actively use social media platforms as a core component of their promotional activities. The most utilised platforms are Facebook and Instagram, where producers share stories about their vineyards' history, wine offerings and enotourism-related services. Many also emphasise maintaining a well-designed website to provide information about their offerings and attract visitors. Advanced marketing tactics, such as search engine optimisation (SEO) and paid Google advertisements have been adopted to enhance the visibility of vineyards. These efforts are supported by participation in industry events, including trade shows and exhibitions as well as collaboration with winemaking associations to increase brand awareness.

The results of the analysis reveal several important patterns, which are illustrated by the following statements from participants. Examples:

> "We mainly focus on growing grapevines, as that's our primary income source. But of course, we also have a small orchard with apples, apricots, etc., for our use, like making preserves."
>
> (C02)

> "We organise various activities, tastings and even outdoor movie screenings. These help us build a memorable connection with visitors."
>
> (C07)

> "We sell wine exclusively on-site. Unfortunately, our production isn't large enough to distribute to stores, let alone supermarkets."
>
> (C07)

> "We have physical stores in local markets, which makes it easier for people who don't visit our vineyards to buy our wine. This also encourages them to visit the vineyard later."
>
> (C06)

> "We focus on direct sales and have agreements with partner points. We also sell via our website."
>
> (C08)

> "We have Facebook, Instagram and website."
>
> (C01)

> "We also participate in trade fairs and exhibitions, as well as collaborate with winemaking associations for promotional events."
>
> (C07)

Strategic analysis – SWOT with expert evaluation

Based on the data collected through in-depth interviews (IDIs), a SWOT matrix was developed, comprising nine strengths, four weaknesses, four opportunities, and five threats. In the next step, experts were asked to assess the weight of the factors in the SWOT matrix.

The experts participating in the study were specialists from the viticulture and horticulture sectors, including practitioners actively involved in vineyard and fruit farm management, as well as academic researchers with professional expertise in winemaking, fruit production and agri-food competitiveness. Given the formative stage of the Polish wine industry, the number of highly specialised experts in viticulture and oenology remains limited. Therefore, the panel included individuals whose expertise combines practical and scientific knowledge of vineyard management, fruit production and competitiveness in high value agricultural sectors. This structure reflects the actual availability of professional experience in the national context.

To clarify the composition of the expert panel, predefined selection criteria were applied. Experts had to meet at least one of the following conditions: hold an academic or advisory position in viticulture, horticulture, agronomy, or agri-food production; or possess professional experience in vineyard management, wine production, or fruit farming, including ownership or management of a vineyard or orchard. Initially, 18 experts were invited to participate in the evaluation. Of these, 14 accepted the invitation, while four declined due to time constraints. No financial incentives were offered to the experts. Instead, their participation was voluntary, with the promise of formal acknowledgment in the study results and access to the final report. Due to data protection and privacy considerations, the names of the individual experts are not disclosed. However, their general affiliations included the Department of Pomology and Horticultural Economics, regional agricultural advisory centres in the Łódzkie, Mazowieckie and Świętokrzyskie voivodeships, and established commercial vineyards. In total, 10 experts participated in the evaluation process. This number was considered sufficient to ensure diversity of perspectives while maintaining analytical clarity, especially in a national context where the number of highly specialised wine industry experts remains limited. The experts were asked to evaluate the relative importance of strategic factors previously identified in the SWOT matrix developed from in-depth interviews (IDIs). Importantly, the evaluation did not aim to compare Polish vineyards against global benchmarks. Instead, experts assessed each factor in relation to the specific conditions and potential of central Poland. The instructions explicitly clarified that responses should be context sensitive and not based on absolute international standards. This approach aimed to quantify the relative importance of various strategies for enhancing the competitiveness of vineyards in central Poland. The weighting system ranged from 1 to 10, where a weight of 1 indicated a very small strategic impact and a weight of 10 represented a very high strategic impact (Table 5).

Strengths were evaluated based on their contribution to competitive advantage and operational efficiency. The highest-rated strengths were high-quality grape and wine production – 9.5 (Table 5) and producer knowledge and experience in viticulture and winemaking (9.2), reflecting their critical role in ensuring product excellence and market trust. This high rating reflects the strategic significance of small-scale, quality-oriented production typical for Polish vineyards. Most operate on plots under 2 hectares, emphasising manual work, low yield per vine and artisanal methods. These characteristics are central to emerging premium positioning of Polish wines on both domestic and niche international markets. Additionally, favourable climatic conditions and strategic location scored above 8, underscoring their significance in supporting viticultural practices and attracting consumers. Although Poland cannot be equated with traditional wine regions in absolute terms, recent climatic shifts, such as longer growing seasons, milder winters and increased heat accumulation, have contributed to more predictable cultivation and higher yields, particularly for varieties already well-adapted to the local climate, such as *Solaris*, *Regent* and *Johanniter* [**Krasowska et al., 2021**]. The expert rating reflects these relative improvements in the local agro-climatic context over decades. The sum of ratings for strengths reached 68.2, indicating robust internal capabilities.

Weaknesses were assessed for their potential to hinder operations or growth. The most significant weaknesses included soil quality (6.4) and issues with seasonal workers (6.2), which reflect challenges in resource management and workforce availability. While central Poland features diverse soil types, several vineyard locations take advantage of well-drained, mineral-rich soils combined with favourable sun exposure. In viticulture, such conditions, despite being suboptimal for other crops, can promote vine balance and flavour concentration. The expert evaluation likely took into account the overall suitability of these site-specific characteristic for quality grape production. Lower scores, such as lack of opportunities for vineyard expansion (3.4), emphasise the specific constraints affecting scalability. The sum of ratings for weaknesses reached 21.4, highlighting areas requiring strategic improvement.

Opportunities represented potential growth avenues for the vineyards. The emergence of grape varieties adapted to local conditions (8.8) received the highest score, showcasing the potential to enhance product quality and resilience. Other high-ranking opportunities included increased wine consumption (7.2) and greater awareness of wine production among Poles (6), reflecting favourable consumer trends and educational progress. The sum of ratings for opportunities reached 27.8, suggesting moderate external growth potential.

Threats were rated for their potential to disrupt vineyard operations or diminish competitiveness. Frosts (8.1) and climate instability and regional weather variability (8) were rated as the most significant threats, reflecting the vulnerability of viticulture to climatic factors. This concern reflects not a contradiction of global warming trends but local anomalies such as unseasonably cool or wet summers, reduced heat accumulation and irregular weather patterns that can negatively impact vine development and grape quality in specific years. Other notable threats, such as fungal diseases (6.4) and legal instability (5.8), further highlight external uncertainties. The sum of ratings for threats reached 39.2, emphasising significant external challenges.

The strategic analysis highlights that strengths significantly outweigh weaknesses, as indicated by the market position score of 0.76. This high value reflects robust internal capabilities, including the high quality of wine production, strong knowledge and experience in viticulture and favourable climatic conditions. These attributes underscore the effectiveness of marketing strategies, the premium quality of products, and the positive perception of the brand among consumers. Such a strong internal foundation positions central Polish vineyards to maintain and expand their market share, even in the face of challenges.

In contrast, the market attractiveness score of 0.41 reveals a less favourable external environment, where threats outweigh opportunities. While there are promising aspects, such as increasing consumer awareness about wine and the emergence of locally adapted grape varieties, external challenges such as frost risk, climate instability and rising costs of production inputs weigh heavily on the industry. This score indicates moderate market opportunities, suggesting that while there is room for growth, significant external hurdles must be addressed.

The combined probability of strategic success of 0.59 reflects a cautiously optimistic outlook. Although this is not a maximum score, it provides a realistic assessment of the potential for success. The strong internal strengths of central Polish vineyards offer a solid base for achieving strategic goals, but external risks necessitate proactive mitigation measures.

Table 5. SWOT analysis with average factor weights according to expert evaluation (weights measured on a scale of 1 to 10)

Strengths (Average Factor Weights) **The sum of ratings** 68.2	**Weaknesses (**Average Factor Weights) **The sum of ratings** 21.4
1. Good vineyard location (8.1) 2. Knowledge and experience of the producer in viticulture and winemaking (9.2) 3. Viticultural knowledge and tradition (7.4) 4. Skilled workforce (7.7) 5. High-quality grape and wine production (9.5) 6. Favourable climatic conditions for viticulture (8.2) 7. Modern technology used in vineyard operations and winemaking (6) 8. Easy access to the vineyard by all means of transport (6.1) 9. Registered vineyard name in the Patent Office (6)	1. Soil quality (6.4) 2. Lack of opportunities for vineyard expansion (3.4) 3. Absence of accommodation facilities (5.4) 4. Issues with seasonal workers (6.2).
Opportunities (Average Factor Weights) **The sum of ratings** 27.8	**Threats (**Average Factor Weights) **The sum of ratings 39.2**
1. Greater awareness among Poles about wine production (6) 2. Increased wine consumption by Poles (7.2) 3. Wine sales in foreign markets (5.8) 4. Emergence of grape varieties adapted to cultivation in Poland (8.8)	1. Climate instability and regional weather variability (8) 2. Frosts (8.1) 3. Fungal diseases (6.4) 4. Legal instability (5.8) 5. Emergence of new vineyards (competition) (5.7) 6. Rising costs of plant protection products and fertilisers (5.2)
Market Attractiveness (MA) = 0.45 Market Position (MP) = 0.76 Strategic Success Probability (SSP) = 0.60	

Source: Author's own study.

Discussion

The SWOT analysis of vineyards in central Poland highlights significant strengths that form the foundation of maintaining competitiveness in the wine market. These strengths are closely tied to unique local climatic and soil conditions, enabling the production of high-quality wines capable of gaining tradition in both domestic and international markets. **Zawadka** [**2020**] emphasises that leveraging these inherent strengths is essential for the sustainable development of the wine industry. Additionally, the growing consumer interest in locally produced wines and wine tourism further supports the strategic potential of these regional vineyards [**Górska, Nowak, 2021**]. According to **Maciejewska et al.** [**2024**], the development of enotourism in central Poland is a real possibility, which, however, requires an organised approach and the cooperation of various entities. Integrating enotourism with agricultural production creates opportunities to increase farm income, while contributing to greater financial stability and the development of local communities. Despite these strengths, the analysis reveals several weaknesses that could constrain the growth and expansion of vineyards. These include limited access to efficient distribution networks and insufficient promotional efforts, which are critical for building brand visibility. According to **Kaczmarek** [**2020**], investments in soil improvement technologies and marketing strategies emphasising the unique characteristics of each winery are essential for overcoming these limitations. Such measures address internal weaknesses while positioning vineyards to exploit external opportunities in the increasingly competitive wine market.

This study incorporates in-depth interviews (IDI) with winery owners to gather detailed, qualitative insights into the challenges and opportunities faced by vineyards. As a widely accepted method for qualitative research, IDIs provide rich data by allowing participants to share their experiences and perspectives freely [**Charmaz, 2014**]. This approach enables researchers to explore themes such as market strategies and operational constraints in detail, making IDIs particularly effective for studies on niche industries such as winemaking [**Bryman, 2016**]. The qualitative nature of IDIs complements the SWOT analysis, providing depth and context to the strategic factors.

Opportunities identified in the SWOT analysis include growing global demand for premium, locally sourced and sustainable wines. Studies have shown that wine tourism significantly boosts the economic viability of vineyards, particularly when combined with local attractions and cultural experiences [**Hall et al., 2000**, **Smith, Hall, 2018**]. For vineyards in central Poland, capitalising on this trend could involve creating visitor-friendly facilities offering guided tours and partnering with local tourism agencies to attract broader audiences [**Jones, Jenkins, 2015**]. This shift toward sustainability can provide additional opportunities as consumers increasingly seek organic and eco-friendly products [**Gabzdylova et al., 2009**].

However, the analysis also identifies external threats that require a strategic response. Shifting consumer preferences, competition from established wine regions and climate change pose significant challenges [**Jones, Goodrich, 2008**; **Schultz, 2016**]. Addressing these threats will require vineyards to adopt innovative viticulture techniques and diversify product offerings [**Martin, Randle, 2019**].

The study findings underscore the importance of integrating qualitative insights from IDIs with quantitative and strategic tools such as SWOT analysis to create a comprehensive understanding of the wine industry's challenges and opportunities. An integrated management approach that leverages internal strengths while addressing weaknesses is vital for sustaining competitiveness. This aligns with literature emphasising adaptability and innovation as key drivers of success in the wine industry [**Teece et al., 1997**]. Additionally, regional collaboration among vineyards could amplify collective competitiveness through shared marketing efforts and participation in international trade fairs [**Hall et al., 2000**; **Beverland, 2004**].

While central Polish vineyards benefit from strong local conditions and growing consumer interest, they must address weaknesses in distribution and promotional activities through targeted investments. The global demand for sustainable and premium wines presents opportunities, but external threats such as climate change highlight the need for innovation and resilience. Furthermore, owner motivation has been recognised as a critical factor influencing strategic decision and success in the wine industry. **Scott Morton and Podolny**

[2002] found that in the Californian wine sector the balance between economic motivation and passion for winemaking significantly shaped vineyard performance and strategic choices. Although this study focused on operational and marked factors, future research on Polish vineyards could benefit from exploring how different types of owner motivation impact development paths and competitiveness in the emerging wine industry.

Despite the valuable insight gained, the study is subject to several limitations that should be acknowledged. First, the research was based on a small, non-random sample of 10 vineyard owners from central Poland. Participants were recruited using purposive sampling, targeting a diversity of vineyard sizes and operational models, but the limited number of cases restricts the generalisability of the findings. This sampling strategy is consistent with qualitative research norms, where representativeness is not the goal, and small, information-rich samples are appropriate for exploring complex phenomena [Patton, 2002; Guest et al., 2006]. The qualitative nature of the study prioritises depth and contextual richness over breadth and statistical interference. As such, the results are best interpreted as exploratory and indicative, offering grounded insight into the dynamics of the wine industry rather than definite conclusions [Marshall, Rossman, 2014]. Second, while the SWOT analysis based on expert evaluations provided structured strategic insights, it inherently carries the limitation of subjectivity – even though experts were carefully selected based on professional criteria and asked to rate factors and individual perceptions of the sector. This potential bias is an inherent characteristic of all expert-driven assessments and should be considered when interpreting the findings. As noted by previous researchers, expert panels can introduce variation and selective emphasis depending on participants' individual experiences [Okoli, Pawlowski, 2004]. Future research could complement expert evaluations with broader stakeholder consultations or longitudinal studies to further mitigate subjectivity. Third, the scope of the study was limited to central Poland. While this region is emerging as a dynamic area for wine production, future studies could expand the geographical scope to include comparative perspectives across other parts of Poland or Central and Eastern Europe. Finally, while semi-structured interviews provided detailed perspectives on marketing strategies, operational challenges and development potential, the study did not include quantitative market performance data or consumer surveys. Incorporating such data in future research could offer a more comprehensive view of competitiveness and consumer behaviour [Creswell, Poth, 2018]. These limitations notwithstanding, the study contributes to a better understanding of growing yet understudied segment of the Polish agri-food sector and provides a foundation for further, more extensive investigations into the development potential of the domestic wine industry.

Conclusions

Vineyards in central Poland benefit from favourable climatic conditions and soils which, although generally considered low in fertility, are well suited for viticulture and enable the production of high-quality wines recognised both domestically and internationally. However, challenges such as distribution inefficiencies and limited promotion hinder market penetration and consumer awareness. Marketing strategies emphasize product quality and uniqueness, while pricing balances costs with competitive positioning. Distribution remains a weak point, with limited access to networks and partnerships. Financial constraints further restrict promotional efforts and brand-building campaigns.

Regional collaboration could help overcome these barriers. By pooling resources, vineyards could enhance promotional activities, join international trade fairs, and develop joint marketing initiatives, thereby boosting their global competitiveness. Consumer interest in high-quality, locally produced wines offers growth potential, supported by investments in technology such as precision agriculture and advanced fermentation techniques.

The reliance on self-reported data introduces potential bias in the research, yet the study provides actionable insights for improvement. Strengthening distribution and increasing promotional investment are crucial. Flexibility in adapting to market trends, leveraging online platforms, and fostering regional cooperation can help central Polish vineyards establish themselves as premium producers both domestically and internationally.

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